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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,917	12/31/2003	Kun-Ching Chen	250123-1020	1406
24504	7590	01/24/2006	EXAMINER	
THOMAS, KAYDEN, HORSTEMEYER & RISLEY, LLP 100 GALLERIA PARKWAY, NW STE 1750 ATLANTA, GA 30339-5948			LEE, BENNY T	
			ART UNIT	PAPER NUMBER
			2817	

DATE MAILED: 01/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/749,917	CHEN ET AL.	
	Examiner	Art Unit	
	Benny Lee	2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-20 and 29-36 is/are pending in the application.
- 4a) Of the above claim(s) 8,9,19 and 20 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7,10-15,29 and 30 is/are allowed.
- 6) ☒ Claim(s) 16-18 and 31-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 7-20 and 29-36 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 8, 9, 19, 20 remain withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 25 April & 1 August 2005.

The disclosure is objected to because of the following informalities: In replacement paragraph [0026], 7th & 8th lines therein, note that “dielectric layer 416” should correctly be -- dielectric layer 420-- since it is that dielectric layer (and not dielectric layer 416) which is disposed on the “metal layer 406” as depicted in figure 4. Appropriate correction is required.

Claims 16-18, 31-36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 16, fifth line, should “the second dielectric layer” properly be --the first dielectric layer--? Clarification is needed.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 16-18, 31, 33, 35, 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mansour (of record) in view of Bahl et al.

Note that the Mansour reference discloses a substrate comprising: a first high dielectric constant dielectric layer (46) with an opening therein (60); a second low dielectric constant dielectric layer (38) disposed within the opening; and a high frequency signal transmission line (36) disposed on the second dielectric layer. However, Mansour et al differs from the claimed invention in that it lacks a specific disclosure of any relative difference in dielectric constant between the first and second dielectric layers.

Bahl et al discloses a microstrip line structure (18) comprising: a first dielectric layer (24) having a high dielectric constant material (i.e. 12.9); a second dielectric buffer layer (e.g. 27, 30) having a lower dielectric constant material (i.e. 3.0) which is disposed relative to the first dielectric layer; and a conductive strip or signal trace (20) associated with the low dielectric constant layer (i.e. 27, 30). Note that the low dielectric constant of the second dielectric layer provides the benefit of substantial reduction in dissipation loss in the microstrip line (18).

Accordingly, it would have been obvious to have realized the second dielectric layer (38) of Mansour as a low dielectric constant material and the first dielectric material (46) as a high dielectric constant layer in view of the teachings of Bahl et al. Such a modification would have been considered consistent with the arrangement in Mansour, especially since in Mansour, the dielectric layer (38) is the one associated with the signal line and thus would have corresponded to the low dielectric constant layer (i.e. 27, 30) of Bahl et al, thereby suggesting the obviousness

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of such a modification. Moreover, consistent with the teaching of Bahl et al, the use of the low dielectric constant material layer would have imparted to the corresponding dielectric layer (38) in Mansour, the advantageous benefit of reduced dissipation loss provided by the low dielectric constant material, as taught by Bahl et al, thus further suggesting the obviousness of such a modification.

Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over the preceding rejection as applied to claim 17 above, and further in view of Martel (of record).

The above combination meets the claimed invention except for the low dielectric constant material being polytetrafluoroethylene (i.e. PTFE).

However, as taught by Martel et al, use of PTFE material as a dielectric layer used in a microstrip signal line arrangement has been recognized as being conventional in the art.

Accordingly, it would have been obvious in view of the references, taken as a whole, to have realized the low dielectric constant material of the combination as PTFE. Such a modification would have been considered an obvious substitution of art recognized equivalent low dielectric constant dielectric materials, especially since PTFE is a material consistent with the polyimide material used as the low dielectric constant material in the teaching of Bahl et al, as relied on in the combination, thereby suggesting the obviousness of such a modification.

Applicant's arguments with respect to claims 1, 5, 6; 7, 13, 14, 18 have been considered but are moot in view of the new ground(s) of rejection.

Claims 7, 10-15, 29, 30 are allowable over the prior art of record.

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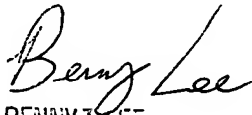
Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benny Lee whose telephone number is 571 272 1764.

B. Lee


BENNY T. LEE
PRIMARY EXAMINER
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